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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/915,906	07/25/2001	Byoung Kwon Cha	000939-085400US	7303

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EXAMINER

NGUYEN, TAN

ART UNIT PAPER NUMBER

2827

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/915,906	Applicant(s) CHA, BYOUNG KWON	
	Examiner Tan T. Nguyen	Art Unit 2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 17-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 41-44 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 17-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The following action is in response to the amendment submitted on March 29, 2005.

2. Claims 1-5, 17-44 are pending.

Claims 6-16 and 45-49 have been canceled.

3. The amendment filed on March 29, 2005 proposes amendments to claims 5 and 17-44 that do not comply with 37 CFR 1.173(b), which sets forth the manner of making amendments in reissue applications. A supplemental paper correctly amending the reissue application is required.

Except the original claims 1-4, all the new amended claims must be underlined at all time.

4. The disclosure is objected to because of the following informalities:

In column 2, line 60 and line 66, "101111011" is a 9 bits signal. It should be changed to 8-bit signal.

Appropriate correction is required.

5. Claims 17-19 and 20-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 17, lines 5-6 and 10-11, it is not clear what "a given circuit" and "a second circuit" are. It is not clear how the given circuit configured to reprogram only the memory cells that have not been properly programmed. . It is not clear how the second circuit transmits a signal to initiate reprogramming of any memory cells that that has not

been properly programmed. Which of the given circuit and the second circuit is the latch circuit and the control circuit in the specification ?

6. The indicated allowability of claims 20-40 is withdrawn in view of the newly discovered reference(s) to U.S. Patent No. 4,811,294 and 5,521,868. Rejections based on the newly cited reference(s) follow.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 20-22 and 34-40, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (U.S. Patent No. 4,811,294) in view of Nobukata (U.S. Patent No. 5,521,868).

Kobayashi et al. disclosed in Figure 1 a conventional EEPROM comprising a memory cell array [1] (column 1, line 20), an input buffer [8] which receives data to be written into a memory cell selected in accordance with an address signal (column 1, lines 25-27), a comparator [12] receives data from a sense amplifier [11] and data latched in a data latch [9] to compare the same as to check whether the written-in data is identical with the latched data, and a write/erase controller [13] controls the write and the write operation into the memory cell array (column 1, lines 50-59). Kobayashi further disclosed the data is written in byte by byte (column 1, line 62). As shown in Fig.1, the signal from the comparator [12] to the write/erase controller [13] would be

considered as the claimed first signal, and the signal from the write/erase controller [13] to the comparator [12] would be considered as the claimed second signal. Kobayashi disclosed in column 3, lines 32-40 the write cycle and the rewrite cycle.

Kobayashi did not discuss the reprogramming of only the memory cells that have not been programmed properly.

Nobukata disclosed in the Abstract a non-volatile memory device having a re-writing of data selectively only in cells in which data is written incompletely.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the memory device of Kobayashi et al. by providing the rewriting method of Nobukata.

The rationale is as follows: A person of ordinary skill in the art would have been motivated to use the rewriting method of Nobukata to rewrite data to only the cells that not have been programmed correctly which would save time of the verify operation and also prolong the life the other memory cells,

Regarding claim 21, Kobayashi disclosed the comparator [12] receives data from a sense amplifier [11] and data latched in a data latch [9] to compare the same as to check whether the written-in data is identical with the latched data (column 1, lines 53-55).

Regarding claim 22, Kobayashi disclosed the data is written in byte by byte (column 1, line 61-62).

Regarding claims 34-40, the number of bits of data to be written appears to be an obvious matter. A person of ordinary skill in the art would have been motivated to select

an appropriate number of bits of data to be written to maximize the program operation of the memory device.

9. Claims 17-19 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

10. Claims 23-33 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. ***

Tomoeda and Tanaka et al. are cite to show memory devices having rewrite operation to only cells that have not been programmed properly.

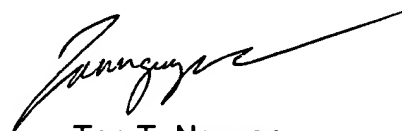
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan T. Nguyen whose telephone number is (571) 272-1789. The examiner can normally be reached on Monday to Friday from 07:00 AM to 03:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoai Ho, can be reached at (571) 272-1777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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Tan T. Nguyen
Primary Examiner
Art Unit 2827
June 10, 2005